

REMARKS/ARGUMENTS

This Amendment is filed in response to the Office Action dated November 20, 2008, and within the three month period for reply extending to February 20, 2009.

Claims 10-11, 14, 16, and 20-27 are cancelled.

5 Claims 1, 7, 12, and 17 are currently amended.

Claims 1-9, 12-13, 15, and 17-19 remain pending.

Drawings

On the Office Action Summary sheet, the Office has again objected to the original as-filed drawings. However, in the body of the Office Action, the Office has not 10 elaborated further on the objection to the drawings. As previously indicated to the Office, the Applicant filed formal drawings on July 19, 2004, in response to the Notice to File Corrected Application Papers. The Applicant's filing of formal drawings on July 19, 2004, is also confirmed by Private Pair. Therefore, the Office is requested for the THIRD TIME to withdraw the objection to the drawings and acknowledge receipt of the formal
15 drawings filed July 19, 2004.

Rejections under 35 U.S.C. 103

Claims 1, 7, 12, 17, and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Feghali (U.S. Patent Application Publication No. 2005/0123140) in view of Knee et al. ("Knee" hereafter) (U.S. Patent No. 7,194,651). These rejections are 20 traversed.

With reference to "Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in KSR International Co. v. Teleflex Inc.," Section III.A., the Applicant notes that the Office has effectively asserted that the elements of the prior art (i.e., of the Feghali and Knee references) can be

combined according to known methods to yield predictable results. To reject a claim on this rationale, the Office must articulate the following:

“(1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference;

5 (2) a finding that one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely would have performed the same function as it did separately;

10 (3) a finding that one of ordinary skill in the art would have recognized that the results of the combination were predictable; and

(4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.”

15 If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art. For reasons discussed below, the Applicant submits that the combined cited prior art does not include each element as recited in claim 1. Therefore, the Applicant submits that the Office’s articulation of “(1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference,” is in error.

20 Determination of whether the prior art includes each element claimed requires findings of fact concerning the teachings of the references applied. Therefore, the

Applicant will now factually indicate how the cited prior art fails to teach the various elements of claim 1, in contrast to the Office's assertion.

In applying the combination of Feghali and Knee to reject claim 1, the Office has asserted that Feghali (paragraph [0015]) teaches each feature of the first and second execution units, as recited in claim 1, other than the first and second execution units being part of a core. The Office has relied upon Knee to simply teach a dual-core processor, and has asserted that the functional teachings of Feghali can be implemented within the dual-core processor of Knee. Therefore, it is necessary for the Applicant to focus primarily on the asserted teachings of Feghali in traversing the outstanding rejection of claim 1.

10 The Applicant respectfully submits that the functional teachings of Feghali (particularly paragraph [0015]) fail to teach the features of claim 1, as asserted by the Office. Feghali (paragraph [0015]) states in-part the following:

15 "At least one embodiment of the invention may be used to improve the performance of hash algorithms by performing various operations associated with the algorithm concurrently, or "pipelining" the operations, within a microprocessor. Pipelining the SHA-1 algorithm, for example involves performing various iterations of the main compression loop at different stages of a microprocessor concurrently in one embodiment of the invention."

20 Feghali (paragraph [0029]) also states the following:

"The inner compression loop that executes the above equation may be performed much faster by performing the loop in a pipelined processor architecture, wherein each iteration of the loop is performed by a dedicated pipeline stage or stages."

25 Feghali (paragraph [0034]) further states the following:

“The main loop equation of the SHA-1 must be decoded into separate operations corresponding to the operations that must be performed at each iteration of the loop at operation 405. Operations corresponding to each iteration of the loop may then be scheduled for execution within a particular pipeline stage at operation 410.”

5 Based on the above excerpts of Feghali, it should be understood that the pipelining of Feghali is defined such that the iterations of the main compression loop of the SHA-1 algorithm can be performed concurrently by different pipeline stages. Those of skill in the art will understand that a message schedule computation is separate from the 10 main compression function of the SHA-1 algorithm. Therefore, while Feghali teaches performance of each iteration of the main compression loop in a particular pipeline stage. Feghali is silent with regard to message schedule computation.

More specifically, Feghali is silent with regard to a first execution unit defined to perform a message schedule computation on a data block of a message, particularly in 15 contrast to a second execution unit defined to perform a compression function on the partial result received from the first execution unit in parallel with the first execution unit continuing the message schedule computation on the data block. Simply stated, Feghali is only concerned with pipelining of the compression function of the SHA-1 algorithm, and does not teach or suggest anything with regard to the message schedule computation, 20 which is performed separate from and prior to the actual compression function.

Notwithstanding the shortcomings of Feghali’s teachings as discussed above, the Applicant has amended claim 1 to further distinguish the message schedule computation, the compression function, and the relationship therebetween. Specifically, claim 1 has been amended to clarify that the message schedule computation is performed on a data 25 block of a message to generate an expanded representation of the data block from a first

number of bits to a larger number of bits. Also, amended claim 1 clarifies that a partial result of this expanded representation of the data block is communicated from the first execution unit to the second execution unit. Moreover, claim 1 has been amended to clarify that the compression function is defined to iteratively consume the partial result of 5 the expanded representation of the data block as generated by the message schedule computation.

In view of the above-identified amendments to claim 1, it should now be even more clear that the message schedule computation is separate from the compression function. Consequently, it should be understood that Feghali's teaching with regard to 10 pipelining of a compression function, has nothing to do with a message schedule computation. Simply stated, Feghali does not teach that a message schedule computation is performed by a first execution unit to generate an expanded representation of a data block of a message, and that a partial result of this expanded representation of the data block is communicated to a second execution unit to have a compression function 15 performed thereon.

Additionally, beyond simply citing paragraph [0015] of Feghali, the Office has provided no explanation as to how the disclosure of paragraph [0015] of Feghali can be reasonably construed to teach the features of claim 1, as asserted by the Office. Specifically, in applying the combination of Feghali and Knee to reject claim 1, the 20 Office has failed to specifically identify a particular feature of Feghali that can be construed with rational underpinning to teach a first execution unit defined to perform a message schedule computation on a data block of a message, as recited in claim 1.

In view of the foregoing, the Applicant submits that the combination of Feghali and Knee fails to teach each feature of amended claim 1. Therefore, the Applicant 25 submits that the Office's articulation of "(1) a finding that the prior art included each

element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference,” is in error.

If any of the above-identified findings (1)-(4) cannot be made, then the rationale 5 that the elements of the prior art can be combined according to known methods to yield predictable results cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art. As discussed above, the Office’s articulation of finding (1) is unclear and in error. Moreover, the Applicant submits that finding (1) cannot be made based on the cited art of record. The analysis supporting a rejection under 10 35 U.S.C. 103 should be made explicit. Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), and *KSR*, 550 U.S. at _____, 82 USPQ2d at 1396. Therefore, the Applicant submits that 15 claim 1 is not rendered *prima facie* obvious under 35 U.S.C. 103 by the combination of Feghali and Knee. Therefore, the Office is requested to withdraw the rejection of claim 1 under 35 U.S.C. 103.

Each of independent claims 7, 12, and 17 recites features similar to those argued above with regard to claim 1, and have been rejected on the same basis as claim 1. 20 Therefore, the Applicant submits that the arguments presented above with regard to claim 1 are equally applicable to each of claims 7, 12, and 17. Therefore, the Applicant submits that each of claims 7, 12, and 17 is not rendered *prima facie* obvious by the combination of Feghali and Knee. Therefore, the Office is requested to withdraw the rejections of claims 7, 12, and 17 under 35 U.S.C. 103.

Because a dependent claim incorporates each and every feature of its independent claim, the dependent claim is patentable for at least the same reasons provided for its independent claim. Therefore, claim 19 is patentable for at least the same reasons as claim 17. Therefore, the Applicant requests the Office to withdraw the rejection of claim 5 19, under 35 U.S.C. 103.

Claims 2-3 were rejected under 35 U.S.C. 103(a) as being unpatentable over Feghali and Knee in view of Col et al. ("Col" hereafter) (U.S. Patent No. 6,330,657). These rejections are traversed.

Because a dependent claim incorporates each and every feature of its independent 10 claim, the dependent claim is patentable for at least the reasons provided for its independent claim. Therefore, each of dependent claims 2 and 3 is patentable for at least the same reasons as independent claim 1. Thus, the Applicant requests the Office to withdraw the rejections of claims 2 and 3, under 35 U.S.C. 103.

Claims 4, 5, 8, and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable 15 over Feghali and Knee in view of Lilly (U.S. Patent No. 4,829,355). These rejections are traversed.

Because a dependent claim incorporates each and every feature of its independent claim, the dependent claim is patentable for at least the reasons provided for its independent claim. Therefore, each of dependent claims 4, 5, 8, and 13 is patentable for at 20 least the same reasons as its independent claim. Thus, the Applicant requests the Office to withdraw the rejections of claims 4, 5, 8, and 13, under 35 U.S.C. 103.

Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Feghali and Knee in view of Tague et al. ("Tague" hereafter) (U.S. Patent No. 4,799,181). This rejection is traversed.

Because a dependent claim incorporates each and every feature of its independent claim, the dependent claim is patentable for at least the reasons provided for its independent claim. Therefore, dependent claim 6 is patentable for at least the same reasons as independent claim 1. Thus, the Applicant requests the Office to withdraw the 5 rejection of claim 6, under 35 U.S.C. 103.

Claims 9, 15, and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Feghali, Knee, and Lilly, in view of Gibson (U.S. Patent No. 5,155,820). These rejections are traversed.

Because a dependent claim incorporates each and every feature of its independent claim, the dependent claim is patentable for at least the reasons provided for its independent claim. Therefore, each of dependent claims 9, 15, and 18 is patentable for at least the same reasons as its independent claim. Thus, the Applicant requests the Office to withdraw the rejections of claims 9, 15, and 18, under 35 U.S.C. 103.

The Applicant submits that all of the pending claims are in condition for allowance. Therefore, a Notice of Allowance is requested. If the Examiner has any questions concerning the present Amendment, the Examiner is requested to contact the undersigned at (408) 774-6914. If any additional fees are due in connection with filing this Amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No. SUNMP501).

20 Respectfully submitted,
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